

REMARKS/ARGUMENTS

Claims 19, 3-10, 12, 13, 15-17, 20 are pending in the present application.

This Amendment is in response to the Office Action mailed June 4, 2008. In the Office Action, the Examiner rejected claims 19, 3-10, 12, 13, 15-17 and 20 under 35 U.S.C. §102(b) and claims 11 and 14 under 35 U.S.C. §103(a). Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Claims Rejected Under 35 U.S.C. § 102

Claims 19, 3-10, 12, 13, 15-17, and 20 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,902,096 to Behringer et al. (“Behringer”). A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP § 2131. Applicant respectfully submits that each and every element in claim 19 and its respective dependent claims is not set forth in the cited reference.

Independent claim 19 includes the limitation of:

A pump including a housing, a cavity with opposing surfaces, an inlet port opening into the cavity, an outlet port opening from the cavity, a pressure port connected to the cavity, a flexible membrane located within the cavity, the flexible membrane being mounted within the housing and a pre-set is applied to the flexible membrane such that the membrane adopts a first stable state in contact with one of the opposing surfaces of the cavity and can be caused to invert into a second stable state by the application of pressure to the cavity via the pressure port, the bi-stable membrane thereby being movable between the first and second stable states corresponding to completion of inlet and exhaust of a pumping cycle.

As can be discerned in Figure 1 of the Application, two stable states exist for membrane 14. The first stable state of Claim 19 is presented in Figure 1 by the solid lines, and the second

by the dashed lines. (See also p. 8 lns. 1-25) "The membrane is moved between its two stable positions by application of negative P1 and positive P2 pressure applied to cavity 13b through port 22." (App., p. 8 lns. 11-12.)

By contrast, Behringer discloses a flexible membrane 20 that is stretched through the cavity and has a central, neutral state as shown in Figure 2. The membrane is driven from the central, neutral state into one of two unstable states by application of vacuum or pressure via passageway 14. (Behringer, col. 2, lns. 61-65) The two unstable states are shown in Figures 5A and 5C. When the membrane is in either of these states it is stretched, and this stretching tends to force the membrane back towards the central, neutral state of Figure 2. Therefore, membrane 20 only has **one** stable position, in the central, neutral state. (Behringer, FIG. 2) Behringer does not disclose or suggest the following features, all required by independent claim 19:

- i) flexible stable membrane being mounted with a pre-set applied thereto,
- ii) a first stable state in contact with one of the opposing surfaces of the cavity,
- iii) the membrane is inverted into a second stable state by the application of pressure to the cavity via the pressure port,
- iv) the bi-stable membrane thereby being movable between the first and second stable states corresponding to the completion of inlet and exhaust of a pumping cycle.

The Applicant's invention as defined in claim 19 provides advantages not available in Behringer. In particular, the Applicant's claimed invention provides the following advantages over Behringer:

1. The Applicant's membrane is mounted with a pre-set (Claim 19). By virtue of such pre-set, no further stretching of the membrane occurs during the operation of the pump, which results in a significantly longer life for the membrane. (App., p.

2 lns. 10-12) This reduces downtime and replacement costs.

In contrast, the membrane in Behringer is stretched whenever pressure or vacuum is applied to it. This reduces membrane life.

2. The Applicant's membrane moves from one stable state to the other with great accuracy. The resting state for the membrane is at full displacement in one of the stable states. The pump volume is accurately displaced. The Applicant's pump is therefore accurate and predictable in operation.

In contrast, the membrane of Behringer may not accurately displace the pump volume, since the membrane's natural resting position is in the central, neutral state. (Behringer, FIG. 2) These inaccuracies are described at page 2, lines 12 to 14 of the Applicant's specification.

3. The Applicant's pump is efficient because energy is expended in pumping fluid, not in stretching the membrane.

In contrast, significant energy is expended in Behringer merely in stretching the flexible membrane 20 into the positions of Figures 5A and 5C. This is wasted energy, resulting in lower efficiency.

As such, Behringer does not disclose each and every limitation of independent claim 19, namely, the limitations discussed in detail above. Dependent claims 3-10, 12, 13, 15-17 and 20 depend on independent claim 19 and therefore include all of the limitations thereof. Accordingly, Applicant respectfully requests that the Patent Office withdraw the rejection of claims 19, 3-10, 12, 13, 15-17 and 20 under 35 U.S.C. §102(b) as anticipated by Behringer.

Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claim 11 under 35 U.S.C. §103(a) as being unpatentable over Behringer et al. ("Behringer") in view of U.S. Patent No. 3,947,156 issued to Becker ("Becker"). Applicant respectfully traverses the rejection and submits that the Examiner

has not met the burden of establishing a *prima facie* case of obviousness.

Since claim 11 depends from Claim 19 which, for the reasons noted above, is patentably distinguishable over the prior art of record and since Becker does not provide the teachings missing from Behringer, Applicant submits that the pending claim, namely Claim 11 is also in condition for allowance. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §103(a) be withdrawn.

In the Office Action, the Examiner also rejected claim 14 under 35 U.S.C. §103(a) as being unpatentable over Behringer et al. ("Behringer") in view of U.S. Patent No. 3,947,156 issued to Dilworth ("Dilworth").

Since claim 14 depends from Claim 19 which, for the reasons noted above, is patentably distinguishable over the prior art of record, and since Dilworth does not provide the teachings missing from Behringer, Applicant submits that the pending claim, namely Claim 14 is also in condition for allowance. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §103(a) be withdrawn.

Therefore, Applicant believes that all pending claims are now patentable over the cited references.

Accordingly, from the amendments and remarks, Applicant believes that all of the pending claims, namely Claims 1-21 are now in condition for allowance, which early action is requested.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly, extension of time fees.

If a telephone interview would expedite the prosecution of this Application, the Examiner is invited to contact the undersigned at (310) 207-3800.

Respectfully submitted,

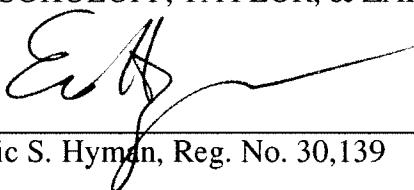
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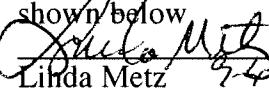
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